

WHAT IS CLAIMED IS:

1. A securing device for a spring, comprising:

a generally annular spring support comprising a spring mount that projects on an inner side of the spring support and is configured to support the spring; and

a generally annular coupling ring configured to connect to the spring support, to secure the spring between the spring support and the coupling ring.
2. The securing device according to claim 1, wherein:

said spring support has a first inner diameter and a second inner diameter; and

said spring mount radially inwardly projects at a region between said first inner diameter and said second inner diameter.
3. The securing device according to claim 1, wherein first threads are formed on an inner periphery of the spring mount of the spring support, and second threads are formed on an outer periphery of the coupling ring, the first and second threads configured to threadedly engage each other.
4. The securing device according to claim 1, wherein the coupling ring comprises synthetic resin and is configured to at least one of press and fix a periphery of the spring via a generally ring-shaped nut.
5. A securing device for a spring, comprising:

P23593.S06

a generally annular spring support comprising a spring mount that projects on an inner side of the spring support and is configured to support the spring;

a generally annular coupling ring configured to connect to the spring support, to secure the spring between the spring support and the coupling ring; and

a plurality of fixation holes penetratingly formed through the coupling ring, the plurality of fixation holes configured to accept a respective plurality of fixation tools.

6. The securing device according to claim 5, wherein:

said spring support has a first inner diameter and a second inner diameter; and

said spring mount radially inwardly projects at a region between said first inner diameter and said second inner diameter.

7. The securing device according to claim 5, wherein first threads are formed on an inner periphery of the spring mount of the spring support, and second threads are formed on an outer periphery of the coupling ring, the first and second threads configured to threadedly engage each other.

8. The securing device according to claim 5, wherein the coupling ring comprises synthetic resin and is configured to at least one of press and fix a periphery of the spring via a generally ring-shaped nut.

9. The securing device according to claim 5, wherein the plurality of fixation holes are at an interval of one of approximately 90° and 180° on the coupling ring.

P23593.S06

10. A securing device for a spring, comprising:

a generally annular spring support comprising a spring mount that projects on an inner side of the spring support and is configured to support the spring;

a generally annular coupling ring configured to connect to the spring support, to secure the spring between the spring support and the coupling ring; and

a plurality of threaded holes in the coupling ring.

11. The securing device according to claim 10, wherein:

said spring support has a first inner diameter and a second inner diameter; and

said spring mount radially inwardly projects at a region between said first inner diameter and said second inner diameter.

12. The securing device according to claim 10, wherein first threads are formed on an inner periphery of the spring mount of the spring support, and second threads are formed on an outer periphery of the coupling ring, the first and second threads configured to threadedly engage each other.

13. The securing device according to claim 10, wherein the coupling ring comprises synthetic resin and is configured to at least one of press and fix a periphery of the spring with a generally ring-shaped nut.

P23593.S06

14. The securing device according to claim 10, wherein the plurality of threaded holes are at an interval of one of approximately 90° and 180° on the coupling ring.

15. A securing device for a spring, comprising:

a generally annular spring support comprising a spring mount that projects on an inner side of the spring support and is configured to support the spring;

a generally annular coupling ring configured to connect to the spring support, to secure the spring between the spring support and the coupling ring; and

a plurality of grooves in the coupling ring.

16. The securing device according to claim 15, wherein:

said spring support has a first inner diameter and a second inner diameter; and

said spring mount radially inwardly projects at a region between said first inner diameter and said second inner diameter.

17. The securing device according to claim 15, wherein first threads are formed on an inner periphery of the spring mount of the spring support, and second threads are formed on an outer periphery of the coupling ring, the first and second threads configured to threadedly engage each other.

P23593.S06

18. The securing device according to claim 15, wherein the coupling spring comprises synthetic resin and is configured to at least one of press and fix a periphery of the spring via a generally ring-shaped nut.

19. The securing device according to claim 15, wherein the plurality of grooves are at an interval of one of approximately 90° and 180° on the coupling ring.

20. A securing device for a spring, comprising:

a generally annular spring support comprising a spring mount that projects on an inner side of the spring support and is configured to support the spring;

a generally annular coupling ring configured to connect to the spring support, to secure the spring between the spring support and the coupling ring; and

a plurality of projections in the coupling ring.

21. The securing device according to claim 20, wherein:

said spring support has a first inner diameter and a second inner diameter; and

said spring mount radially inwardly projects at a region between said first inner diameter and said second inner diameter.

22. The securing device according to claim 21, wherein a first threads are formed on an inner periphery of the spring mount of the spring support, and second threads are formed on an outer periphery of the coupling ring, the first and second threads configured to threadedly engage each other.

P23593.S06

23. The securing device according to claim 21, wherein the coupling ring comprises synthetic resin and is configured to at least one of press and fix a periphery of the spring with a generally ring-shaped nut.

24. The securing device according to claim 21, wherein the plurality of projections are at an interval of one of approximately 90° and 180° on the coupling ring.

25. A method of securing a spring to a reciprocating device, the method comprising:

inserting a spring into a generally annular spring support such that a spring mount of the spring support supports the spring; and

connecting a generally annular coupling ring to the spring support such that the spring is secured and sandwiched between the coupling ring and the projection.